

Title (en)
METHOD AND APPARATUS FOR PARALLEL CONCATENATED LDPC CONVOLUTIONAL CODES ENABLING POWER-EFFICIENT DECODERS

Title (de)
VERFAHREN UND VORRICHTUNG FÜR PARALLEL VERKETTETE LDPC-FALTUNGSCODES ZUR AKTIVIERUNG LEISTUNGSEFFIZIENTER DECODER

Title (fr)
PROCÉDÉ ET APPAREIL POUR DES CODES CONVOLUTIONNELS LDPC CONCATÉNÉS EN PARALLÈLE ACTIVANT DES DÉCODEURS À FAIBLE CONSOMMATION D'ÉNERGIE

Publication
EP 3231094 A4 20180328 (EN)

Application
EP 15868223 A 20151207

Priority

- US 201462089035 P 20141208
- US 201562147410 P 20150414
- US 201514827150 A 20150814
- KR 2015013298 W 20151207

Abstract (en)
[origin: US2016164537A1] A method of encoding includes receiving input systematic data including an input group (xz(n)) of Z systematic bits. The method includes generating an LDPC base code using the input group (xz(n)). The LDPC base code is characterized by a row weight (Wr), a column weight (Wc), and a first level lifting factor (Z). The method includes transforming the LDPC base code into a Trellis-based Quasi-Cyclic LDPC (TQC-LDPC) convolutional code. The method includes generating a Parallel Concatenated TQC-LDPC convolutional code in a form of an H-matrix including a systematic submatrix (Hsys) of the input systematic data and a parity check submatrix (Hpar) of parity check bits, wherein the Hpar includes a column of Z-group parity bits. The method includes concatenating the Hpar with each column of systematic bits, wherein the Hpar includes J parity bits per systematic bit.

IPC 8 full level
H03M 13/25 (2006.01); **H03M 13/03** (2006.01); **H03M 13/11** (2006.01)

CPC (source: EP KR US)
H03M 13/036 (2013.01 - EP); **H03M 13/1137** (2013.01 - EP); **H03M 13/114** (2013.01 - EP); **H03M 13/1154** (2013.01 - EP KR US); **H03M 13/116** (2013.01 - EP KR US); **H03M 13/6362** (2013.01 - EP KR US)

Citation (search report)

- [XYI] US 2014223254 A1 20140807 - PISEK ERAN [US]
- [XAYI] US 2013086455 A1 20130404 - PISEK ERAN [US]
- [Y] DANIEL COSTELLO ET AL: "Spatially coupled sparse codes on graphs: theory and practice", IEEE COMMUNICATIONS MAGAZINE., vol. 52, no. 7, 14 October 2013 (2013-10-14), US, pages 168 - 176, XP055233331, ISSN: 0163-6804, DOI: 10.1109/MCOM.2014.6852099
- [A] PUSANE A E ET AL: "Deriving Good LDPC Convolutional Codes from LDPC Block Codes", IEEE TRANSACTIONS ON INFORMATION THEORY, IEEE PRESS, USA, vol. 57, no. 2, 1 February 2011 (2011-02-01), pages 835 - 857, XP011348929, ISSN: 0018-9448, DOI: 10.1109/TIT.2010.2095211
- See also references of WO 2016093568A1

Designated contracting state (EPC)
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